

WHAT IS CLAIMED IS:

1. A wireless communication apparatus
comprising:

5 a plurality of fine functional elements each
having communication means for data transmission
and reception by using radio waves or light and
one or more means other than the communication
means; and

10 a base station for controlling and
collectively managing said fine functional
elements through communications with said fine
functional elements,

15 wherein one or more means other than the
communication means are activated through
communications of one of said fine functional
elements received control information from said
base station with another of said fine functional
elements via the communication means.

20 2. A wireless communication apparatus
according to claim 1, wherein each of said fine
functional elements utilizes, as an energy source
for activating one or more means other than the
communication means, power generating means
25 possessed by the fine functional element or
energy of radio waves or light sent from said
base station.

3. A wireless communication apparatus
according to claim 1, wherein an element for
realizing the communication means and an element
for realizing one or more means other than the
5 communication means are formed on a single
substrate.

4. A wireless communication apparatus
according to claim 1, wherein one or more means
10 other than the communication means include
imaging means, displaying means, storing means
and arithmetic processing means.

5. A wireless communication apparatus
15 according to claim 1, wherein said base station
transmits the control information to one of said
fine functional elements which activates one or
more means other than the communication means in
accordance with the control information, and
20 transmits information obtained by one or more
means other than the communication means to said
base station, and said base station processes the
transmitted information.

25 6. A wireless communication apparatus
according to claim 1, wherein the imaging means
comprises a fine sphere lens having a partial

flat plane, a parallel flat plate parallel to the
partial flat plane, and a flat circuit board
formed with an imaging element and a
communication circuit to be disposed on the
5 partial flat plane.

7. A wireless communication method for a
wireless communication apparatus, the apparatus
comprising:

10 a plurality of fine functional elements each
having communication means for data transmission
and reception by using radio waves or light and
one or more means other than the communication
means; and

15 a base station for controlling and
collectively managing said fine functional
elements through communications with said fine
functional elements,

wherein one or more means other than the
20 communication means are activated through
communications of one of said fine functional
elements received control information from said
base station with another of said fine functional
elements via the communication means.

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8. A wireless communication method
according to claim 7, wherein each of said fine

functional elements utilizes, as an energy source for activating one or more means other than the communication means, power generating means possessed by the fine functional element or
5 energy of radio waves or light sent from said base station.

9. A wireless communication apparatus comprising:

10 a functional element group including a plurality of functional elements each having a first function for performing wireless communication by using light or radio waves and a second function different from the wireless
15 communication,

wherein the second function of each of the functional elements is a single function, and said functional element group provides as a whole one or more of the second function through a
20 cooperative work of each of the functional elements using the first function.

10. A wireless communication apparatus according to claim 9, wherein said functional
25 element group forms a network system in which the wireless communication among the functional elements is performed by using the first function.

11. A wireless communication apparatus
according to claim 9, wherein the functional
elements provide, as the second functions,
sensing functions for measuring different types
5 of physical amounts.

12. A driving method for a wireless
communication apparatus, wherein:

the wireless communication apparatus is used
10 which comprises a functional element group
including a plurality of functional elements each
having a first function for performing wireless
communication by using light or radio waves and a
second function different from the wireless
15 communication;

the second function of each of the
functional elements is a single function; and

each of the functional elements is disposed
at a desired position to provide as a whole one
20 or more of the second function through a
cooperative work of each of the functional
elements using the first function.

13. A wireless communication apparatus
25 according to claim 1, wherein:

a base station is provided for collectively
managing the functional elements constituting a

functional element group; and

said base station controls the functional element group through the wireless communication among the functional elements, or receives data.